

1 1. A method of performing spectral analysis, said method comprising,
2 obtaining an optical spectrum, and
3 normalizing said optical spectrum by application of non-uniform segment normalization.

1 2. The method of claim 1, wherein said normalizing further comprises,
2 selecting one or more segments from said optical spectrum, each of said segments being
3 bounded by an upper wavelength and a lower wavelength and containing one or more
4 wavelengths, each of said wavelengths having an associated amplitude,
5 determining an area under a curve associated with each particular segment, wherein each
6 said curve is bounded along a first axis by said upper wavelength and said lower wavelength of
7 said particular segment, and along a second axis by said amplitudes associated with each of said
8 wavelengths included in said particular segment,
9 summing said areas for each of said segments to determine a normalization factor, and
10 dividing at least one said associated amplitude for one of said wavelengths included in
11 said segments by said normalization factor.

1 3. The method of claim 2, wherein a first segment differs in size of wavelength range from
2 that of a second segment, wherein said size of wavelength range is defined as the absolute
3 magnitude of a difference between said upper wavelength and said lower wavelength.

1 4. The method of claim 2, wherein a first segment is equal in wavelength range to a second
2 segment, wherein said size of wavelength range is defined as the absolute magnitude of a
3 difference between said upper wavelength and said lower wavelength.

1 5. The method of claim 2, wherein said one or more segments comprises at least first and
2 second non-contiguous segments.

1 6. The method of claim 2, wherein said one or more segments comprises at least first,
2 second and third segments, and there exists a first span between an upper wavelength of said first

segment and a lower wavelength of said second segment, and a second span between an upper wavelength of said second segment and a lower wavelength of said third segment.

7. The method of claim 6, wherein said first and said second spans differ in magnitude.

8. The method of claim 6, wherein said first and said second spans are substantially equal in magnitude.

9. The method of claim 1 further comprising, obtaining said spectrum from a specimen of human cervical tissue.

10. The method of claim 1 further comprising, determining a disease status of said test specimen by analyzing said optical spectrum subsequent to said normalizing.

11 A system for performing spectral analysis comprising,
a spectrographic device, adapted to obtain an optical spectrum from a test specimen, and
a processor adapted to normalize said optical spectrum by application of non-uniform segment normalization.

12. The system of claim 11, further comprising machine readable instructions executing on said processor and adapted to,

select one or more segments from said optical spectrum, each of said segments being bounded by an upper wavelength and a lower wavelength, and containing one or more wavelengths, each of said wavelengths having an associated amplitude,

determine an area under a curve associated with each particular one of said segments, wherein each said curve is bounded along a first axis by said upper wavelength and said lower wavelength of said particular segment, and along a second axis by said amplitudes associated with each of said wavelengths included in said particular segment,

sum said areas for each of said segments to determine a normalization factor, and

11 divide at least one said associated amplitude for one of said wavelengths included in said
12 segments by said normalization factor.

1 13. The system of claim 12, wherein said machine readable instructions are further adapted to
2 one of select and enable a user to select a first segment different in size of wavelength range from
3 that of a second segment, wherein said size of wavelength range is defined as the absolute
4 magnitude of a difference between said upper wavelength and said lower wavelength.

1 14. The system of claim 12, wherein said machine readable instructions are further adapted to
2 one of select and enable a user to select a first segment to be substantially equal in size of
3 wavelength range to that of a second segment, wherein said size of wavelength range is defined
4 as the absolute magnitude of a difference between said upper wavelength and said lower
5 wavelength.

1 15. The system of claim 12, wherein said machine readable instructions are further adapted to
2 one of select and enable a user to select said one or more segments to include at least first and
3 second non-contiguous segments.

1 16. The system of claim 12, wherein said machine readable instructions are further adapted to
2 one of select and enable a user to select said one or more segments to include at least first,
3 second and third segments, and there exists a first wavelength span between an upper wavelength
4 of said first segment and a lower wavelength of said second segment, and a second wavelength
5 span between an upper wavelength of said second segment and a lower wavelength of said third
6 segment.

1 17. The system of claim 16, wherein said first and said second spans differ in magnitude.

1 18. The system of claim 16, wherein said first and said second spans are substantially equal in
2 magnitude.

1 19. The system of claim 11, wherein said spectrographic device is further adapted to obtain
2 said optical spectrum from a specimen of human cervical tissue.

1 20. The system of claim 12, wherein said machine readable instructions are further adapted to
2 extract a test parameter from said optical spectrum.

1 21. The system of claim 12, wherein said machine readable instructions are further adapted to
2 determine a disease status of said test specimen by analyzing said optical spectrum, subsequent to
3 said normalizing.

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